A CONCORDANCE FOR THE NEW ZEALAND SPECIES OF *EPILOBIUM*

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ABSTRACT

A concordance is presented for New Zealand taxa of *Epilobium* with respect to the treatments provided by Cheeseman (1925), Allan (1961) and Raven & Raven (1976).

KEYWORDS: concordance, nomenclature, taxonomy, *Epilobium,* Onagraceae, New Zealand.

In our experience, the appearance of Raven & Raven's (1976) elegant and meticulous monograph on *Epilobium* in Australasia appears so far to have had as much a stultifying as an inspirational effect on the study of this genus in New Zealand. To some extent this is attributable to cost and to format (in ordinary taxonomic use, the pages of specimen citations are a hindrance). However, also significant are the systematic arrangement, which is very different from that of Allan (1961, pp.254-81) and especially the taxonomic treatment itself which, compared to that of Allan, shows widespread and complex changes.* Of 50 species recognised by Allan, only 20 survive unmodified! Even one of these suffers a change of name. Six more species are expanded and three contracted in concept to only a minor degree, but the remaining 21 are more profoundly changed, either in status or in circumscription. Finally, since the key includes 4 species confined to Australia and 4 endemic to New Guinea, it is thereby rendered, from a strictly New Zealand point of view, that much more complex than it need be. (It is hoped to take action towards provision of a more appropriate key for use in Canterbury in the near future.)

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* Insight into the reasons for the very substantial differences existing between treatments, and in particular between that of Allan and those of Cheeseman and Raven & Raven, is provided in two paragraphs in Raven & Raven (1976, pp.79 & top of 80).

In reality, Raven & Raven's treatment is much simpler than that of Allan, recognising only 37 species as native to New Zealand (two of which moreover were respectively described or first recognised in New Zealand since 1961) in contrast to the 50 of Allan. However, the lack of a published concordance makes it difficult to correlate Allan's treatment with Raven & Raven's revision. Since we have had perforce to produce such a concordance for our own use in relation to our teaching activities, it seems sensible to make it more generally available. The concordance is extended by the inclusion of the second edition of Cheeseman (1925, pp.599-617). This may appear at first sight to be a complication of doubtful merit, but Cheeseman's treatment is in many respects closer to that of Raven & Raven, and it remains (once its nomenclature has been revised) an entirely serviceable general guide to New Zealand *Epilobium*. Those few species now recognised which have no mention at any taxonomic rank in Cheeseman are, with the sole exception of *porphyrium*, which is widely but thinly distributed through the mountains of the South Island, all very local species. They are, therefore, unlikely to be encountered often.

The principal changes effected by Raven & Raven in comparison to Allan may be summarised thus:-

A) Two species new to the New Zealand flora are recognised:- *margaretiae*, described by Brockie (1965), and *gunnianum* Haussknecht, an Australian species not collected in New Zealand until 1953.

B) Three varieties are raised to specific status:-

ALLAN (1961)		RAVEN & RAVEN (1976)
pedunculare var. *viride*	=	*nerteroides (sic!)*
nerterioides var. *angustum*	=	*angustum* {Raven & Englehorn, 1971}
pubens var. *astonii*	=	*astonii* { " " " }

C) Purely nomenclatural changes, due to previous misapplication of names. These affect only the group of species of prostrate habit. As can be seen below, these alterations to some extent resemble a game of musical chairs:-

	linnaeoides	=	*pedunculare*
	nerterioides	=	*komarovianum*
	pedunculare (major part)	=	*brunnescens*
but!	(as noted above)		
	pedunculare var. *viride*	=	*nerteroides*

D) Species assimilated by a broader interpretation of specific limits:-

i) 5 species absorbed within *alsinoides*
= *elegans, tenuipes, thymifolium, cockaynianum & novae-zelandiae*

ii) 3 species absorbed within *glabellum*
= *vernicosum, rubro-marginatum & erubescens*

iii) 2 species absorbed within *hectorii*
= *simulans & krulleanum*

iv) 2 species absorbed within *confertifolium* (these changes concern only the Subantarctic Islands)
= *findlayi & dawbinii*

v) 5 single species assimilations
= *caespitosum* (within *nummulariifolium)*
= *antipodum* (" *crassum)*
= *perplexum* (" *chlorifolium)*
= *polyclonum* (" *melanocaulon)*
= *cinereum* (" *billardierianum)*

Both *alsinoides* and *glabellum* thus become extremely variable species. Not all of the 'sinkings' involved have met with universal or undiluted enthusiasm (e.g. the disappearance of *rubro-marginatum)*, but these changes undeniably do make the taxonomy of *Epilobium* that much more simple for the general botanist.

Epilobium presents one of the most important examples in the New Zealand flora of adaptive radiation and speciation, well worthy of wider attention, despite its taxonomic difficulty. We hope that the publication of this concordance will in some measure stimulate greater interest in the genus.

CONCORDANCE

The concordance follows the systematic order of Allan (1961) because this is the source which is most widely accessible. Varieties included by Allan are cited here only when subject to significant subsequent taxonomic change. For clarity of presentation, names of authors of specific epithets are throughout omitted. These are, of course, as given in Allan, Cheeseman and Raven & Raven respectively.

All names varying between the three treatments are underlined, except for variants in spelling. Where only the rank of the taxon is changed, the prefix (e.g. subsp., var.) is underlined.

ALLAN (1961)		CHEESEMAN (1925)		RAVEN & RAVEN (1976)	
1	NUMMULARIFOLIUM	20	NUMMULARIFOLIUM, *p. max. p.*	43	NUMMULARIFOLIUM, *p. max. p.*
2	PEDUNCULARE *(var.* PEDUNCULARE)	21	PEDUNCULARE *(var.* PEDUNCULARE)	40a	BRUNNESCENS *subsp.* BRUNNESCENS, *p.p.*
3	" *var.* BRUNNESCENS		" *var.* BRUNNESCENS	40a	" " " *p.p.*
	" *var.* MINUTIFLORIUM		" *var.* MINUTIFLORIUM	40b	" " MINUTIFLORIUM
	" *var.* VIRIDE		" *var.* VIRIDE	42	NERTEROIDES
3	NERTERIOIDES *(var.* NERTERIOIDES)	22	NERTERIOIDES *var.* NERTERIOIDES)	44	KOMAROVIANUM, *p.p.*
	" *var.* MINIMUM		" *var.* MINIMUM	44	" *p.p.*
	" *var.* ANGUSTUM		" *var.* ANGUSTUM	45	ANGUSTUM
4	PERNITENS	-	-	41	PERNITENS
5	PURPURATUM	23	PURPURATUM	27	PURPURATUM
6	MACROPUS	24	MACROPUS	11	MACROPUS
7	CAESPITOSUM	20	NUMMULARIFOLIUM, *p.p.*	43	NUMMULARIFOLIUM, *p.p.*
8	LINNAEOIDES	19	LINNAEOIDES	16	PEDUNCULARE
9	ROTUNDIFOLIUM	18	ROTUNDIFOLIUM	15	ROTUNDIFOLIUM
10	INSULARE	17	INSULARE	12	INSULARE(3)
11	ELEGANS	37	NOVAE-ZELANDIAE, *p.p.*	21b	ALSINOIDES *subsp.* TENUIPES, *p.p.*
12	TENUIPES	11	TENUIPES	21b	" " " , *p.p.*
13	TASMANICUM	9	TASMANICUM	19	TASMANICUM
14	CONFERTIFOLIUM	8	CONFERTIFOLIUM, *p. max. p.*	20	CONFERTIFOLIUM, *p. max. p.*
15	FINDLAYI *(var.* FINDLAYI)	-	-	20	" , *p.p.*
	" *var.* PUBESCENS	-	-	21a	ALSINOIDES *subsp.* ATRIPLICIFOLIUM, *p.p.*
16	ANTIPODUM	-	-	26	CRASSUM, *p.p.*
17	HECTORI	12	HECTORI, *p. max. p.*	23	HECTORII, *p.p.*
18	ALSINOIDES	13	ALSINOIDES, *p.p.*	21a & 21c	ALSINOIDES *subsp.* ATRIPLICIFOLIUM, *p.p.* " " ALSINOIDES, *p.p.*
19	THYMIFOLIUM	13	" , *p.p.*	21c	" " " , *p.p.*
20	COCKAYNIANUM	14	COCKAYNIANUM	21a	" " ATRIPLICIFOLIUM, *p.p.*
21	PICTUM	10	PICTUM	22	PICTUM
22	CHLORAEFOLIUM	15	CHLORAEFOLIUM, *p. max. p.*	18	CHLORIFOLIUM, *p. max. p.*
	" *var.* KAIKOURENSE		" *var.* KAIKOURENSE	18 & 17	" , *p.p.* WILSONII, *p.p.*
23	PERPLEXUM	15	CHLORAEFOLIUM, *p.p.*	18	CHLORIFOLIUM, *p.p.*
24	WILSONII	16	WILSONII	17	WILSONII, *p.p.*
25	GRACILIPES	25	GRACILIPES	39	GRACILIPES
26	CRASSUM	26	CRASSUM, *p. max. p.*	26	CRASSUM, *p. max. p.*
27	SIMULANS	-	-	23	HECTORII, *p.p.*

28	BREVIPES	27	BREVIPES	25	BREVIPES
29	VERNICOSUM	28	VERNICOSUM	29	GLABELLUM, *p.p.*
30	RUBRO-MARGINATUM	29	RUBRO-MARGINATUM	29	" , *p.p.*
31	PYCNOSTACHYUM	30	PYCNOSTACHYUM	31	PYCNOSTACHYUM
32	FORBESII	-	-	35	FORBESII
33	ROSTRATUM	32	ROSTRATUM	34	ROSTRATUM
34	MELANOCAULON	31	MELANOCAULON	30	MELANOCAULON, *p. max. p.*
35	POLYCLONUM	31	" *var.* POLYCLONUM	30	" , *p.p.*
36	MICROPHYLLUM	33	MICROPHYLLUM	32	MICROPHYLLUM
37	DAWBINII	-	-	20	CONFERTIFOLIUM, *p.p.*
38	NOVAE-ZELANDIAE	37	NOVAE-ZELANDIAE, *p.p.*	21a	ALSINOIDES *subsp.* ATRIPLICIFOLIUM, *p.p.*
39	GLABELLUM	35	GLABELLUM, *p.p.*	29	GLABELLUM, *p.p.*
40	ERUBESCENS	35	GLABELLUM, *p.p.*	21	" , *p.p.*
41	KRULLEANUM, *(p.p.)* (1)	34	KRULLEANUM, *(p.p.)*	23	HECTORII, *p.p.*
42	MATTHEWSII	36	MATTHEWSII	28	MATTHEWSII
43	PORPHYRIUM	-	-	24	PORPHYRIUM
44	PALLIDIFLORUM	1	PALLIDIFLORUM	1	PALLIDIFLORUM
45	ERECTUM	4	ERECTUM	48	*OBSCURUM
				& 50	*CILIATUM
46	CINEREUM	5	JUNCEUM	5b	BILLARDIERIANUM *subsp.* CINEREUM (2)
47	HIRTIGERUM	6	HIRTIGERUM	9	HIRTIGERUM
48	BILLARDIERIANUM	3	BILLARDIERIANUM	5c	BILLARDIERIANUM *subsp.* BILLARDIERIANUM (2)
49	CHIONANTHUM	2	CHIONANTHUM	10	CHIONANTHUM
50	PUBENS (3)	7	PUBENS	14	PUBENS, *p. max. p.*
	" *var.* ASTONII	-	-	13	ASTONII
-	-	-	-	2	GUNNIANUM
-	-	-	-	33	MARGARETIAE

p.p. = pro parte = in part
p. max. p. = pro maxima parte = in greater part

* = adventive species

1) Raven & Raven (1976, p.206) state that "Allan... included under this name an assortment of small plants of *E. glabellum* from high elevations, together with some of *E. porphyrium*." (See also *idem*, p.229).

2) Raven & Raven (1976, pp.131-134) include a third subspecies of *billardierianum*, subsp. *intermedium*, an established entity in S.E. Australia, as having occurred in New Zealand, but since the status of these specimens and the present existence of this taxon within New Zealand are both in doubt, it is omitted from this Concordance.

3) Raven & Raven (1976, p.156) indicate that *E. pubens* var. *minor* Kirk (1899, p.170), (= Haussknecht's forma *minor*) is based on material of *E. insulare*. Allan (1961, p.280) clearly assumed that Haussknecht's f. *minor* consisted of small states of true *E. pubens*.

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